ENGINEERING NEWS-RECORD

New bridge spans the Potomac at Ludlow Ferry, fifty miles below Washington. *See page 2*

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The Week In Engineering and Construction

ENGINEERING NEWS-RECORD • DECEMBER 26, 1940

No change seen for Army negotiated contracts

Col. Somervell, new head of Quartermaster Corps construction division, will follow advisory board's recommendations for contractors

No substantial changes in the procedure by which the Quartermaster Corps awards negotiated contracts will result from the current reorganization of the construction division (*ENR*, Dec. 19, p. 33). Lieut. Col. Brehon B. Somervell intends to retain the arrangement by which a civilian advisory board recommends contractors for each job. He will, however, make arrangements to speed up the actual award of contracts after the advisory board has made its recommendations. Contract letting will be handled in the engineering section, one of the five new sections into which the construction division has been decentralized by Col. Somervell in order to speed up operations of the division. Half the cantonments being built by the Quartermaster Corps are behind schedules.

Zone heads given more power

Contractors will soon feel the effect of the division of the country into nine zones, co-terminus with the Army Corps areas. Responsible officers have been named in each of these zones, who will report direct to Col. Somervell. These officers will have the power to make final decisions, in consultation with the Corps Area commanders, on nearly all questions arising in connection with projects in their zone. They will function at first mainly as trouble-shooters on existing jobs, but it is planned steadily to increase their powers. This will probably go so far as to give them the responsibility for award of competitive-bid contracts except in cases where the job goes to other than the low-bidder.

In the Washington office, the work has been divided among five sections. Col. E. H. Leavey will have charge of engineering and contract letting; Col. L. R. Groves, also an engineer officer, the operating section, which looks after the carrying out of contracts after they are awarded; Col. J. W. Younger, the administration section; Col. W. A. Pashley, the finance section; and Col. R. D. Valliant, the real estate section. In addition, Col. W. B. Styer of the Engineer Corps has been made executive assistant to Col. Somervell, and Capt. C. F. Robinson, also of the engineers, has been made control officer with the duty of keeping a constant check on progress of work.

New zone officers

The new zone officers are as follows: Maj. R. G. Richards, Lieut. Col. M. A. MacFadden, Lieut. Col. E. M. George, Col. H. L. Green, Maj. B. F. Vandervoort, Capt. E. C. Hayden, Maj. M. E. Townes, and Lieut. Col. E. V. Dunston.

Photo by Hammond Studio

Monolithic concrete walls for Meridian housing

For two of the four low cost housing projects being carried out by the Housing Authority of the city of Meridian, Miss. at a cost of $1,360,000.00, monolithic concrete exterior walls are used. The two-story buildings call for concrete foundations, concrete floors and roof slabs, steel stairs, tile interior walls plastered, built up roof over 1-in. pulpboard insulation. Gas heaters are used throughout.

The project shown above is that located between 19th and 20th Sts. and 13th and 14th Avenues. It is for colored residents and includes twelve dwellings and one combination dwelling and office. Krouse & Brasfield, Meridian, are architects and Gardner & Howe, Memphis, Tenn., are structural engineers for this work and for the other three projects. The general contractors for the above project are Newton & Schmoll, Hattiesburg, Miss., with M. M. Lockard, general superintendent on the job.

W. W. George is executive director of the Housing Authority of the city of Meridian, which is building the four projects.

Defense Homes Corp. soon to start three jobs

The Defense Homes Corp. is about to start work on its first three projects. Farthest along is a 1,000-unit project at Newport News, Va., where land is already being bought. A 250-unit project is planned at Charleston, S. C., and a 164-unit project at Jacksonville, Fla. It is not yet clear what agency will act as construction agent for the Defense Homes Corp. as it is primarily a financial body set up to provide funds rather than to undertake construction. The corporation may retain private architects much as is done by private operators or it may set up its own agency.

Defense Homes itself is more or less of a paper organization. It was set up some months ago as an RFC subsidiary and has been allocated $10,000,000 by President Roosevelt from his "blank-check" fund. It fits into the defense housing program as a sort of substitute for private industry. The idea is that where studies indicate a permanent need for houses in a rent level which can be self-liquidating, it is intended that private builders provide the housing. If they fail to do so, Defense Homes will go in and meet the need, functioning just like a private operator. From its capital it will put up the normal 20 per cent equity and borrow the rest under an FHA-insured mortgage either from private banks or from the Reconstruction Finance Corporation. After the apartments are built an effort will be made to sell them to private real estate operators. Otherwise they will be operated by Defense Homes on a self-liquidating basis.

Additional road funds for North Carolina

Governor Hoey of North Carolina recently announced an extra $2,000,000 appropriation from the surplus road funds for continuing WPA projects in his state. He said the allocation is being made because state funds for the projects now under way are expiring.

In appearing before the state highway and public works commission to announce allocation, Hoey said that he also intended to allocate an additional $3,900,000 for repairing highway damages caused by the August floods and for new highway projects planned in the state. Of the new $2,000,000 allocation, 10 per cent will be reserved for bridges and the remainder will be prorated among the state's highway districts.

Photo by A. Aubrey Bodine

Two-mile bridge over Potomac at Ludlow Ferry links Maryland with Virginia

Wichert girders and trusses and an 800-ft. cantilever main channel span are features of the 10,050-ft. bridge over the Potomac between Morgantown, Md. and Dahlgren, Va., which was opened Dec. 14.

The foundations for the main spans (ENR Feb. 29, 1940, p. 306) are caissons filled with concrete after being sunk to river bed level to rest on steel H-piles driven to rock. The concrete was placed under water. Some piers are as much as 96 ft. high, and for the approach work the piling is as long as 194 ft. The world's largest floating pile driver was assembled to drive this record length.

Erection of the structure (which is to be described more fully in an early article) was handled by cranes from the ground for the Maryland approach girders and by floating derricks for the Virginia approach beam spans. The 800-ft. main span and 367-ft. anchor spans were erected by the balanced cantilever method using a jacking leg at each of the two main piers. Travellers on the deck erected the other truss spans over falsework spans up to 375 ft. in length. The falsework spans were floated to position and supported on the edges of the pier caps.

The roadway is 24 ft. wide with 1½-ft. walks on each side. The beam spans have a reinforced concrete deck with the main spans utilizing concrete-filled steel grid for the road surface.

J. E. Greiner Co., Baltimore, designed the structure and supervised its construction for the Maryland State Roads Commission. For Greiner, W. H. Pahl had general charge of the work and Raymond Archibald was resident engineer.

The state of Maryland will operate the structure as a toll bridge, anticipating heavy truck and through passenger traffic wanting to avoid Washington.

The substructure was built by the Merritt-Chapman & Scott Corp. of New York, Frank W. Barnes, construction manager, and Wm. Denny, superintendent. The steel was erected by Harris Structural Steel Co. of New York, H. Kendall, chief engineer, and R. H. Smith, superintendent. The deck was placed by Duffy Const. Co. of New York, John Norrgard, superintendent and H. A. Mix, engineer.

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McLaughlin Air Service photo

New York State spending $11,500,000 for hospital development

To provide for treatment of 3,100 mentally defective patients the New York Department of Mental Hygiene on Staten Island is carrying out an $11,500,000 hospital project, including land costs, on a 375-acre site. The work, which includes all the buildings shown in the above picture, was financed by funds approved in 1938. The first construction on the work was begun in the early summer of last year. Some of the buildings already are completed.

At the extreme left is shown the main reception and hospital building. The wings are six stories in height with the central tower eight. For this unit concrete floor slabs, brick walls, tile roof, steel sash and steel frame were used. Also at the left but nearer the foreground may be seen the two dining halls under construction which will have a total capacity of 2,000 people. At the extreme right of the picture are shown six completed units for infirm patients. These have brick walls, tile roofs and terrazzo floor. In the central background may be seen another dwelling unit, and in the extreme background the utility building for the laundries, workshops, garages and warehouses. Near the utilities building is shown the stock for the heating plant, which will use natural gas to reduce the smoke nuisance. Near the utilities building will also be built a sewage treatment plant. The water supplied will be from the city mains with standpipe to be built to provide the necessary pressure. All buildings are to be connected by underground tunnels.

Other buildings besides those shown, for which contracts are to be awarded soon, include two employees buildings, an administrative building, and the servants house. Also the contract for the tunnel connections.

The work is being done by the Department of Public Works, State of New York, for the Department of Mental Hygiene. Thomas F. Farrell is chief engineer of the public works department and William E. Haugaard is commissioner of architecture.

BRIEF NEWS

As a precautionary measure in view of the current national defense program, the Pennsylvania Water & Power Co., Holtwood, Pa. and the Safe Harbor Water & Power Corp., Safe Harbor, Pa., have closed their Susquehanna River hydroelectric plants to visitors.

The old solid center stripe on Alabama highways is being replaced with the "broken-line" system, according to Chris J. Sherlock, Alabama state highway director. The new broken-line system will consist of 15 ft. of line, a 25 ft. gap, and then another 15 ft. stripe. About 4,800 miles of paved road will be affected by the new program.

Attorney general of Arkansas has informed Arkansas Revenue Commissioner Z. M. McCarroll that a contractor on a public building in Arkansas is classed as a "consumer" in the sales tax act and therefore does not have to pay the tax. However, the contractors on "all other buildings" are retailers within the meaning of the law and are liable for the tax.

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Carolinas Branch of AGC sued for damages

Claiming that the Carolinas Branch of the Associated General Contractors of America and several leading contractors in North and South Carolina have conspired to force him out of business, V. P. Loftis, Charlotte, N. C., has filed suit in Mecklenburg Superior Court at Charlotte, seeking $300,000 damages. In one of the suits, Loftis seeks $100,000 actual and $100,000 punitive damages from the Carolinas Branch; from Harry W. Loving, the branch's executive secretary, now on leave for defense work; and from 10 prominent contractors in the two states. The plaintiff claims that the defendants conspired to put him out of business after he resigned as executive secretary of the branch April 1, 1927 to enter the construction field. It is also alleged that the plaintiff refused to enter into a plan whereby contracts would be parcelled out, and that he refused to take part in an estimating-fee system.

In the second suit the Carolinas Branch alone is named, the plaintiff asking $100,000 damage. Loftis claims that he was illegally expelled from membership in the branch, and that defendants attempted to destroy his credit by trying to keep sub-contractors from dealing with him.

Individuals besides Loving who are named defendants to the action are: William Muirhead, Durham, N. C.; Raymond A. Bryan, Goldsboro, N. C.; Charles W. Angle, Greensboro, N. C.; Earle Whitton, Charlotte; Fred N. Thompson, Charlotte; Edwin L. Jones, Charlotte; F. L. Shackelford, Greenville, S. C.; John C. Heslep, Columbia, S. C.; C. P. Street, Charlotte, and Edwin B. Boyle, Sumter, N. C.

Wreckers make scrap metal of New York's 9th Avenue elevated

REMOVAL of 11 miles of New York's 9th Avenue elevated railway, from the Battery to the 155th St. Station, is proceeding rapidly. Truck and crawler cranes, a fleet of trucks, and an average of 600 men are razing what was considered an elegant means of transportation when construction of the present elevated system was started in 1871 (*ENR* June 27, 1940 p. 938). Razing was begun in October of this year. Already removal of the heavy steel is two-thirds complete and stripping of the deck work is expected to be finished by Jan. 1.

A total of 7,000 tons of rails and 55,000 tons of structural steel will be removed. Since none of the steel is allowed to go out of the country, it is loaded on barges for shipment to New Jersey from where it is transported by rail to Pennsylvania steel mills. The good timber is also being salvaged.

Operations are as follows:

1. Rail fastenings are removed by hand tools and the rails cut into convenient lengths with acetylene torches.

2. Rails are stacked on the structure and the emergency walks and handrails removed.

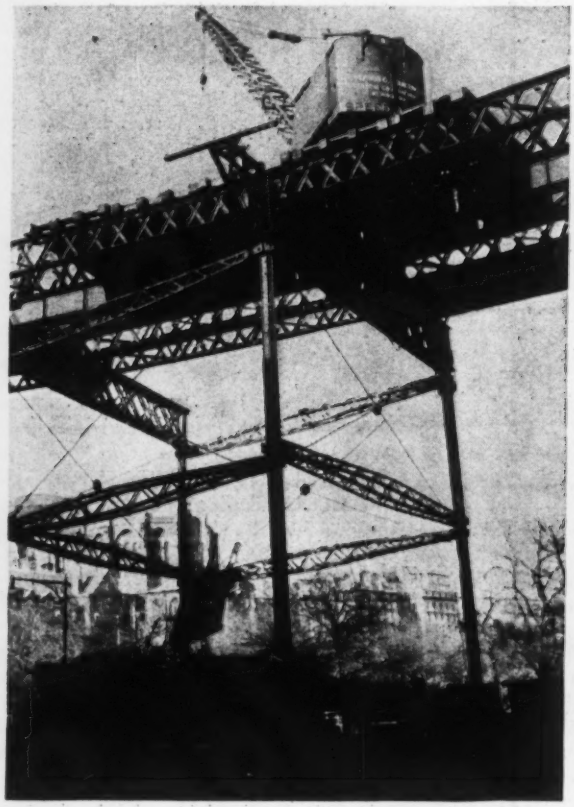
3. Crawler or truck cranes moving along on mats on the structure or at street level, depending upon the height above the street and location of the columns, lowers the handrails, emergency walks, timbers and rails to a truck on the ground.

4. Workmen with torches cut the stringers near the supporting columns. As this work nears completion a crane "takes a strain" on them to lower two stringers with cross bracing to street level as a unit.

5. Top of the bents are cut off with torches and lowered to street by the crane to leave only a short section of the columns standing.

6. Base of each column is excavated to the anchor bolts, which are then burned off, and the columns removed to clear the site. Filling the openings and surfacing the fill with material similar to the surrounding pavement completes the razing.

Most spectacular part of the work is



RAILS are cut into convenient lengths and lowered by crane. Then follows the lowering of the tie system. At 110th St., cranes move along on mats at track level or 60 ft. in the air. For most of work, however, cranes operate from street level.

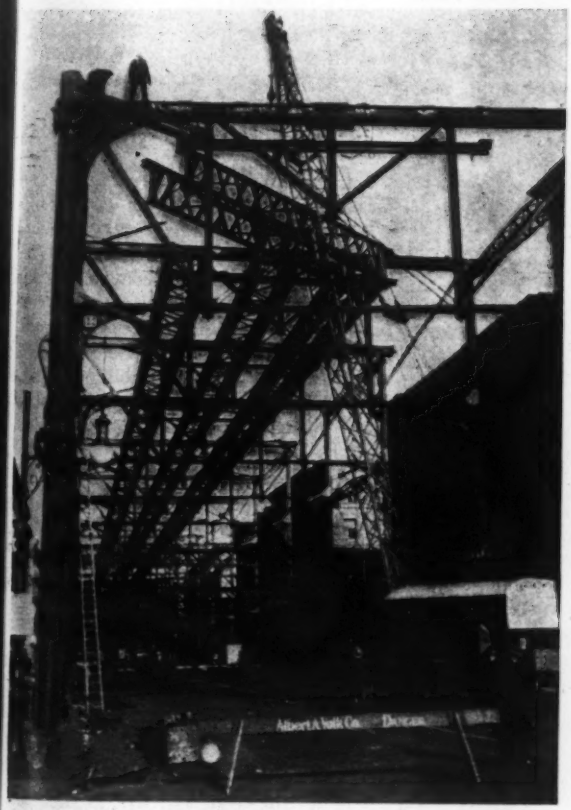
LATTICE stringers are burned almost through near the supporting columns, cuts being made on a diagonal to prevent binding during removal. The crane takes a strain before the piece is cut loose to be lowered to a truck in the street.

that at 110th St. where the structure is 60 ft. above the street.

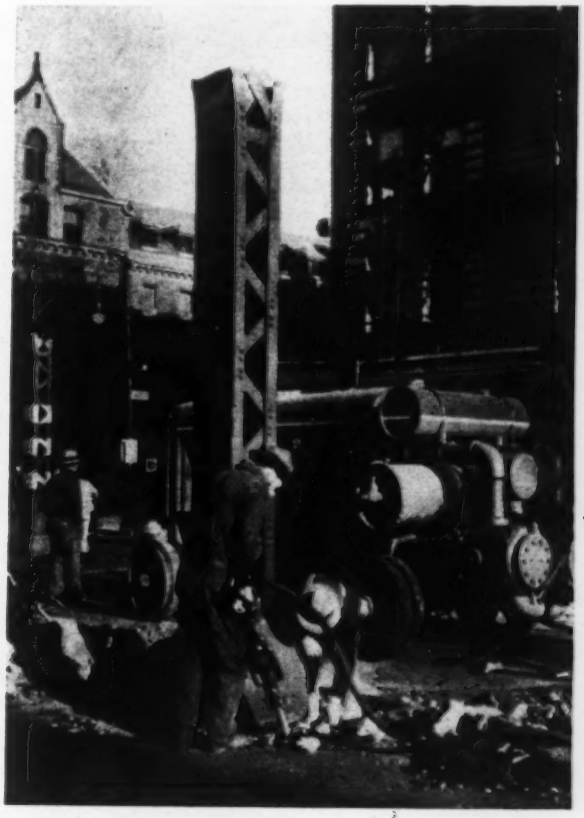
A No. 4 tip is being used for most of the cutting in the field as a large tip permits rapid burning without prior cleaning of the rust or grime from the steel. About five tanks of oxygen are used to one of acetylene, the tanks being carried on a movable scaffold or in a two-wheeled cart. A manifold connects 4 or 5 oxygen tanks to furnish a day's supply for a worker. When cutting lead-painted steel, burners wear breathing masks with air supplied through a filter strapped on the back.

Albert A. Volk Co., New York, represented by A. K. Fleschner, John Rutan, and M. Sheriff, are doing the work under terms of a $74,433 contract with the Board of Transportation, City of New York. For the City L. E. Robbe, division engineer and M. Madden, assisted by A. B. Malcolmson, R. B. Hammond and Wm. B. Maher.

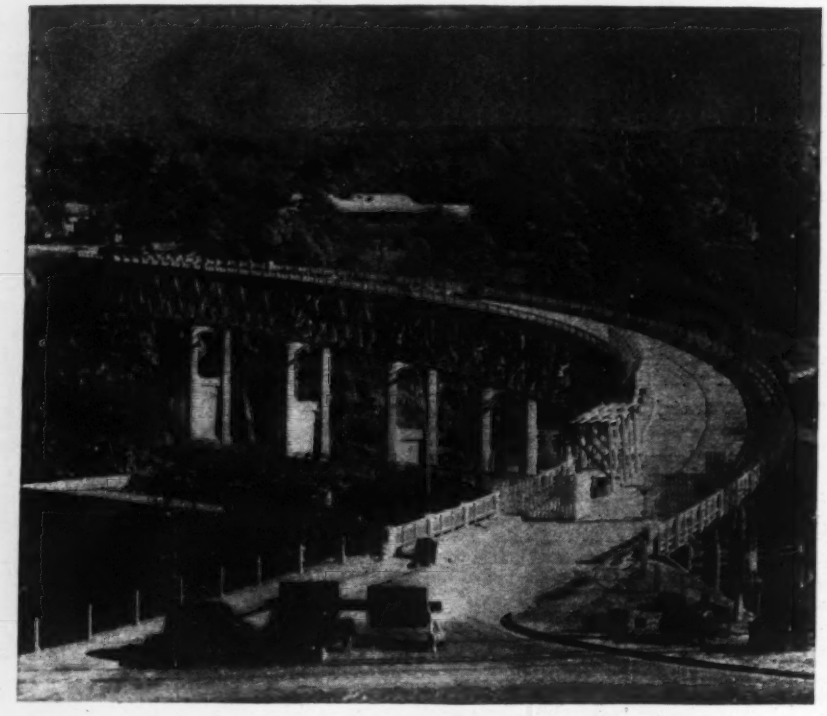
REMOVAL of top of bents calls for torch-cutting of columns where they begin to flare. Note that crane line is tightened to take load as burning is completed. Because of speed desired, schedule of operations, and various other factors, use of No. 4 tip for torches was found most satisfactory.



HERE TWO stringers with cross bracing are lowered as a unit by crane at street level. Unit is removed without further work by truck for shipping by barge to New Jersey. There it is dismantled and loaded for transportation to Pennsylvania steel mills.



BASE of each column is excavated about 1½ ft., to anchor bolts, then bolts are burned off and column pulled over and loaded on truck by crane. Hole is filled and street surfaced with material similar to surrounding pavement.



Alabama highway bridge built on curve

The Benjamin Fitzpatrick Bridge across the Tallapoosa River in Alabama, is built on a horizontal curve of 2 deg. 38 min. with a short part of the roadway on a 5.4 per cent grade and the remaining length on a 1.5 per cent grade. Completed and opened to traffic Dec. 10, the bridge connects Tallasee and East Tallasee on State Route 14. The curve and grade were necessary to avoid a hydro-electric power dam, an electric sub-station, and a cotton mill.

The structure, which has on overall length of 1,738 ft. 4 in., consists from west to east of four steel girder spans each about 70 ft. in length; a three-span continuous truss with the end spans each 181 ft. and the center span 303 ft.; a four-span continuous truss with all spans about 180 ft.; and two 36-ft. reinforced concrete girder spans. The steel girder spans are supported by reinforced concrete bents varying in height from 51 ft. to 82 ft.; the remaining portion of the bridge is built on reinforced concrete piers varying in height from 80 to 123 ft. The bridge provides a 26-ft. roadway and two 4-ft. sidewalks.

Including the approach work, which makes the overall length of the project 3,092 ft., the bridge cost $516,000, with the U. S. Public Roads Administration furnishing $223,000, Elmore and Tallapoosa counties together supplying $129,000, and the state of Alabama the remainder. The work was done by the Alabama State Highway Department, Chris. J. Sherlock, director; Wm. Herzberg, construction engineer; J. P. Trotter, bridge engineer; S. W. Harbin, engineer of surveys and plans; and F. W. Robinson, resident engineer. E. C. White represented PRA on the work. The steel erection was by the Pittsburgh-Des Moines Steel Co., with D. M. Sharp, superintendent of erection. The foundations and floor were built by Hardaway Construction Co., Columbus, Ga.

Chicago builders support blight eradication bill

A bill providing for the eradication of slum and blight areas and their rehabilitation through the medium of neighborhood redevelopment corporations with powers of eminent domain will be submitted to the Illinois State Legislature meeting in January. The Chicago Building Congress is back of the bill as it backed a similar bill meeting defeat in the last legislature. J. Soule Warterfield is chairman of the drafting committee.

The bill would give power to municipalities to create redevelopment commissions to supervise and regulate neighborhood redevelopment corporations and to issue certificates of convenience and necessity before the corporations could acquire properties. The development must be in a declared blighted area and conform to the official plan of the city. Not less than four blocks nor more than 80 acres shall be processed at a time. Financial setup of stocks and mortgages is under commission control. Right of condemnation may be invoked after acquisition of 60 per cent of the development area.

Ohio state highway men advanced

Hal G. Sours, who recently succeeded Maj. Gen. Robert S. Beightler as state highway director of the Ohio state highway department, has announced the following promotions in his department: Glen R. Logue, for the past year chief of the division of location and design, has been advanced to the position of assistant highway director, a post formerly held by Director Sours; Murray D. Shaffer, chief engineer of division No. 3 with headquarters at Ashland, has been moved into the central office as chief engineer of the division of location and design; and Vance T. Grimes, who has served in various capacities in the department, including engineer on maintenance, construction, location and design, has been named to succeed Shaffer.

Sours in reporting upon work of his department states that difficulty is anticipated in the awarding of contracts for the construction of bridges, due to the fact that many of the contractors are fearful that they may be unable to get structural steel because of demands in connection with national defense work. Sours also stated that contractors are experiencing difficulty in securing carpenters. These two difficulties were emphasized Dec. 3 when no bids were received for constructing a bridge in Portage County.

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To make snow survey in Great Lakes area

An organized group known as the Great Lakes Snow Survey Conference met in Detroit recently and laid plans to keep records of snow depths in the Great Lakes area. Subsequent spring runoffs and flood heights are to be estimated. In attendance were representatives of the U. S. Weather Bureau, U. S. Engineers Office and public utilities. M. W. Kyler of the Wisconsin Valley Improvement Association is president and H. M. Wills, meteorologist, East Lansing Weather Bureau, is vice president.

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Jefferson Memorial builders include two not noted

In the description of the Jefferson Memorial work in Washington (*ENR* Nov. 28, 1940, page 716) two contractors aiding in the work were not mentioned. These are Raymond Concrete Pile, New York, and Potts & Callaghan, Baltimore. The former concern drove the necessary piling for the work and tied in the footings. This was a $320,240 job. The Baltimore firm is now building a sea wall for the memorial under terms of a $260,000 contract.

Bureau of investigation continues study of possible sabotage

Has completed detailed survey of over a thousand plants which Army asked be inspected. Recent sensational explosions not due to sabotage

No wave of sabotage is sweeping the country. Industrial fires and explosions are about at a normal level, and the recent sensational accidents in powder mills and shipyards are authoritatively stated not to have been caused by sabotage. The Federal Bureau of Investigation, however, is pushing its precautionary work aimed at protecting manufacturing plants and utilities against the possibility of sabotage. It has practically completed detailed surveys of more than a thousand plants which the Army asked be inspected, and it is still steadily at work on surveys requested by local or plant officials. The FBI will survey a facility connected with defense on request, and make advisory, noncompulsory recommendations. This would include transport facilities and municipal and other utilities, which usually service defense industries.

FBI recommendations simple

Most of the FBI recommendations are rather simple—complete fencing, with a limited number of guarded gates, floodlighting, investigation and control of personnel. The first step in the survey of a utility or a plant is determination of the danger points, locations or processes where a single act of sabotage would cripple all operations—points like the water and power sources of an industrial plant, the penstocks and turbines of a hydro-electric plant, the bridges and tunnels of a railroad. Such points should be carefully mapped.

Adequate fencing and illumination are the main physical protections, and special care should be given to finding irregular entrances such as fire escapes, sewers, and the like. Gates should be installed over spur tracks and guarded when open. Floodlighting systems should be within the fenced area, and interiors of buildings should be lighted. Parking areas should be outside the fenced area, and automobiles should not be admitted within the gates. Delivery platforms, where possible, should be at the fence line, but if trucks must be admitted complete records should be kept. Entrance to areas where particularly vulnerable facilities exist should be restricted to men regularly working there.

Contol of personnel starts with getting fairly complete information about each man. The FBI recommends that a form be used which includes, in addition to the usual employment application data, information on citizenship and immigration status; names and addresses of relatives, particularly those in foreign countries; military service; whereabouts and activities in the years 1914-1918. Local residents, particularly homeowners, are considered most desirable for personnel. It is important that the reason for all absences be checked; employees absent without legitimate excuse should be suspected, particularly if they leave town secretly.

A strict and thorough system of identification is essential. This usually takes the form of a badge indicating the employees right to enter and the locations where he is entitled to be. This regulation must be strictly enforced as to executives and visitors as well as workmen. Badges should always be worn in the same place on the clothing. Employees should also carry identification cards bearing their photographs.

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Ohio River bridge to be toll-free

On March 20 next year the $4,000,000 bridge across the Ohio River between Evansville, Ind., and Henderson, Ky., will become toll-free. The structure, owned jointly by the States of Indiana and Kentucky, was built in 1931 with the agreement that tolls would be charged until Kentucky paid off its bond issue, which will occur January 1.

New Boston subway to open in January

Operation of trolley cars on the new double-track subway under Huntington Avenue in the Back Bay section of the Boston Hub is scheduled to begin about Jan. 1, according to Thomas F. Sullivan, chairman of the Boston Transit Department, which is building the new line. The new 4,316-ft. subway extends from a connection with the Boylston St. subway at Copley Square under Exeter St., the Boston & Albany R. R., and Huntington Ave. to the Boston Opera House. Stations are provided at the Mechanics Building and Symphony Hall.

The total cost of the undertaking is about $7,000,000. The tracks are laid in separate tubes and an underpass for vehicular traffic will be built at Symphony Hall, the intersection of Massachusetts and Huntington avenues. Tracks have been laid on stone ballast from Copley Square to Symphony Hall, and trolley wires, lighting, signal and other equipment are now being installed. The new line will enable all surface tracks to be removed from Huntington Ave. and Boylston St., and will shorten the running time of trolley cars in and out of Park St., Boston, by at least 5 minutes. About 3,000 WPA workers were employed on the project at the time of peak construction.

MEN AND JOBS

HOMER WEEDON has been elected engineer of Noble County, Ohio, with headquarters at Caldwell, Ohio. The election for the office was so close that Weedon won by three votes. GROVER C. SMITH once was thought the winner and the lead changed several times before the election was officially decided.

ROY NUNN of Vancouver, Wash. has been appointed engineer of Douglas County, Wash. with headquarters at Waterville. He replaces WALTER F. WINTERS, who has been given a year's leave of absence to serve as captain in the National Guard at Fort Worden, Wash.

FRANK E. PREBLE, assistant resident engineer for the U. S. Engineers at Mud Mountain Dam near Seattle, Wash., has been transferred to the flood control project at St. Maries, Idaho.

KENNETH R. SCURR, state bridge engineer for the South Dakota State Highway Commission, has been granted leave of absence for military service with the South Dakota National Guard, as lieutenant-colonel. He will be stationed at Camp Ord, Monterey, Calif. Scurr has been state bridge engineer since 1933. He is a graduate of Iowa State College and has held various engineering positions with the cities of Creston, Des Moines, and Fort Dodge, Iowa; Hughes County, S. D.; and the Southern R.R.

ROBERT COWAN, computer in the plans department of the South Dakota State Highway Commission, has been called to active duty with the South Dakota National Guard. Cowan will be stationed at Camp Ord, Monterey, Calif.

J. N. LANGELIER, civil engineer, has been appointed chief engineer of the Montreal, Ont., Metropolitan Commission. He has been manager of the city of Montreal-East for the last 15 years.

J. M. LAFRANCE, district engineer officer in the Military District No. 4 in Canada, has the new rank of major. He was formerly a captain. Major Lafrance following command of the Road Construction Co. of the Royal Canadian Engineers and work in the general headquarters, in April was appointed district engineer officer. Before the start of the present European war, he was district drainage engineer with the Quebec provincial department of Agriculture.

GERALD BYRN, dredging superintendent for the Marine Industries Ltd., Montreal, and a graduate of the Royal Military College of Kingston, Ont., is now serving in England with the Canadian forces.

RODNEY WALTERMEYER, of Middletown, Pa., has resigned as engineer with the Pennsylvania State Highway Department. He will devote his full time to duties as engineer for the boroughs of Middletown, Highspire and Royalton, Pa.

CLOYD C. GRABER, former assistant in the county surveyor's office for Geauga County, Ohio, on Jan. 1 will begin new duties as engineer of Geauga County. He succeeds E. A. Fiedler who has been engineer for the past 17 years. Graber was employed in the Wayne County surveyors office from 1906 to 1908, when he became the city engineer's assistant in Muskogee, Okla. He also worked for the Cleveland & Youngstown Ry. from 1914 to 1919 and as office engineer for the Cleveland Union Terminal Co., Cleveland, Ohio.

HARRY D. WILLIAR, JR., deputy state WPA administrator for the state of Maryland, has been named administrator for that state. He succeeds Francis H. Dryden, who has been made assistant commissioner to take over old duties of Col. Edmund H. Leavey (*ENR*, Nov. 28, 1940, p. 725). Williar has worked with the Maryland State Roads Commission, the city of Baltimore, and the Paving Commission of Baltimore. For a time he was chief engineer of the state roads commission.

E. F. HARPER has been reappointed chief engineer for the East Side Levee and Sanitary District of St. Clair and Madison counties, Ill. with headquarters in East St. Louis, Ill.

ARTHUR T. COCHRANE, since 1933 chief building inspector for the city of St. Louis, has been appointed deputy building commissioner. Cochrane's former post will be given to WILLIAM J. GEEKIE, former building inspector.

S. M. JENKS, graduate of Cornell University and with the United States Steel subsidiaries since 1925, has been appointed general superintendent of the Gary works of the Carnegie-Illinois Steel Corp. He succeeds E. E. MOORE, who has been elected vice president. Jenks has served as chief engineer of the Gary Steel Works.

FRANK BRESHLICH, Mount Vernon, Wash., has been named area engineer for the Work Projects Administration for Whatcom, Skagit and San Juan counties in Washington. He replaces THEODORE HUETTER.

GRAHAM J. BARTON, engineer with the Mississippi State Highway Department, has been ordered to active duty as captain with the 106th Engineers at Camp Blanding, Fla.

RAE SANDERS, formerly with the drafting division of the Mississippi State Highway Department, is now with the Air Corps at Love Field, Dallas, Tex.

D. L. WILSON has resigned as assistant city engineer of Oklahoma City after 15 years of service with the city. He has been engineer of sewer designs, assistant city engineer and acting city engineer during that period. Wilson is a graduate of Purdue University and formerly was connected with the city engineering department of Miami, Fla.

CARLOS SCALLIN, city engineer of Mitchell, S. D., has been given a leave of absence to begin active service with South Dakota National Guard as lieutenant. He will be stationed at Camp Ord, Monterey, Calif. CHARLES A. TRIMMER, former engineer of Madison, S. D., and state engineer of South Dakota from 1935 to 1937, has been appointed to take over Scallin's old duties.

L. A. LARSON, former assistant superintendent on general construction with the Larson Building Co., Ambridge, Pa., has begun new duties with the Philadelphia Navy Yard as junior naval architect.

J. T. SMOODY, until recently engineer in the Cleveland office of The Austin Co., is now on duty as captain in the Quartermaster Corps of the United States Army in charge of construction of a 26,000 troop cantonment project at San Miguel, Calif.

W. J. LEARY, division engineer at Butte, Mont. for the Montana State Highway Department, has resigned to accept a position with the Civil Aeronautics Authority at Kansas City, Mo. R. L. EWING, engineer at Butte will take over Leary's old duties.

PAUL E. DUBOIS of Oklahoma City has been appointed airport engineer for the city of Oklahoma City. It is contemplated to expand the city airport to provide services for an Army bomber squadron. Dubois is a graduate of the University of Oklahoma with the class of 1934; since graduation he has been connected with the engineering department of the city of Oklahoma City.

Seen and heard at the Asphalt Conference

When over 800 gathered at Dallas Dec. 9-13 for the Asphalt Conference, the men shown on this page took an active part.

JOHN BERRY, Cleveland, discussing highway principles and practices applicable to airports.

WM. N. CAREY, St. Paul, told the convention about military roads in the forward areas.

Construction of the Washington National Airport was the topic of COL. ROBT. S. THOMAS, now with the 2nd Engineers at Memphis.

A new vice-president of the Association of Asphalt Paving Technologists is THOMAS E. STANTON, California division of highways.

A couple of Midwesterners looking for warm weather were: R. B. WILLS (left), chief engineer, Kansas highway department, and SAM RUDDER, assistant chief, Missouri highway department.

W. R. MACATEE, district engineer at Washington for the Asphalt Institute, passes confidences to E. M. BRISTOL, the Institute's public relations director.

Director ROY W. CRUM, Highway Research Board, tells of the relation of airport construction to that of highways.

The biggest little man in the Asphalt Institute is Standard Oil (N. J.) HERBERT SPENCER, treasurer of the outfit.

New testing laboratory for Northwestern

Equipment of unusual capacity for a materials testing laboratory has been announced by Dean Ovid W. Eshbach for the Technological Institute of Northwestern University, Evanston, Ill.

One of the special pieces of equipment is a 22-ton hydraulically operated transverse-universal testing machine for measuring strain on steel beams and columns. Nearly two and one-half stories high and capable of exerting a pressure of 1,000,000 lb. at the middle of a beam or truss 55 ft. long, the new testing machine will have the largest transverse testing capacity of any machine in the world. For tension and compression testing the machine will accommodate members up to 20 ft. in length, subjecting them to a stress of 1,000,000 pounds.

Because of the weight and bulk of the materials it will test, the machine will be floor-loading, with the top of its foundation on the ground level. A special two-story door will be constructed to permit a truck-and-trailer combination to back into the building with structural members that are to be tested. An overhead 15-ton crane will lift these members into position for testing.

Other special equipment for the new laboratory, most of which has been ordered, includes the following: A hydraulic press capable of exerting a pressure of 5,000,000 lb. on steel and concrete columns up to 6 ft. in diameter and 12 ft. high; a universal testing machine of 120,000 lb. capacity for bending, compressing and stretching beams or columns in smaller size; special vibration equipment, and polarized light instruments. The equipment for the new laboratory represents a part of the $900,000 worth of new machinery and equipment to be installed in the class-rooms and laboratories of the Institute when it is completed next fall.

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Wisconsin studies change in road fund allocation

The Wisconsin legislature during its forthcoming session will study a proposal to allocate highway funds on a basis considered more equitable to Wisconsin municipalities. Wisconsin cities claim that a fair share of the current $35,000,000 revenue for highway construction in that state would be $8,600,000 for municipalities, whereas at present they receive but $4,500,000.

It is also charged that county roads are slightly favored, and that town roads now receive about $4,800,000, while their participation on an "earnings" basis would be around $2,420,000.

JOBS OF THE WEEK

***MANUFACTURING PLANTS*, Camden, N. J. and Indianapolis, Ind.**
RCA Manufacturing Co., Inc., Camden, N. J., was awarded a contract by the Navy Department for radio equipment plant expansions at Camden, N. J. and Indianapolis, Ind. Estimated cost of construction is $2,370,000.

***HOUSING*, Corpus Christi, Tex.**
Brown & Root and W. S. Bellows, Houston and Columbia Construction Co., Oakland, Calif., have been awarded a $1,027,000 contract for constructing 350 housing units for enlisted men at the Naval Air Station.

***PLANT EXPANSION*, Minneapolis, Minn.**
Northern Pump Co., Minneapolis, Minn., was awarded a machine tool and equipment contract by the Navy Department. Cost of building expansion is estimated at $5,473,297.

***PLANT EXPANSION*, South Charleston, W. Va.**
Carnegie-Illinois Steel Corp., Pittsburgh, plans plant expansion as result of machine tool and equipment contract from the Navy Department. Cost, including tools and equipment, is estimated at $45,000,000.

***ORDNANCE PLANT*, Canton, O.**
Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., will build a naval ordnance plant, including a large power plant. The award was made by the Bureau of Yards & Docks, Navy Department. The cost is expected to be about $16,000,000.

***AIRPLANE PLANT*, River Rouge, Mich.**
Esslinger-Misch Co., Detroit, Mich., was awarded the general contract for a $4,000,000 airplane factory for Ford Motor Co., Dearborn, Mich. Giffels & Vallett, Detroit, are engineers for the project.

***CANTONMENT*, Abilene, Tex.**
R. E. Briggs, San Antonio, Thomas S. Byrne and James T. Taylor (operating as Taylor, Byrne & Briggs) received a contract from the War Department for a cantonment and tent camp estimated to cost $4,500,000.

***BONNEVILLE DAM TURBINES*, Bonneville, Ore.**
S. Morgan Smith, Boston, Mass. was low bidder with a bid of $2,689,100 for constructing the four turbines for Bonneville Dam power plant.

***SHIP YARD EXPANSION*, Seattle, Wash.**
Navy Department, Washington, awarded a $1,400,000 contract for constructing a shipyard expansion to the Seattle-Tacoma Shipbuilding Corp., Seattle.

***AIRPLANE PLANT EXPANSION*, San Diego, Calif.**
Consolidated Aircraft Corp., San Diego, will expand its plant facilities, including new buildings and improvements to existing structure. The $3,090,045 project is financed by the Navy Department.

***SHIPWAYS*, Los Angeles, Calif.**
Bethlehem Steel Co., Los Angeles, will expand the shipbuilding facilities at San Pedro Navy Yard under terms of a $1,250,000 contract with the Navy Department.

***AMMUNITION DEPOT*, Burns City, Ind.**
Maxon Construction Co., Dayton, O., was awarded the contract by the Bureau of Yards and Docks, Navy Department, for constructing the $2,500,000 East Coast Ammunition Depot. The project includes magazine buildings, barracks, quarters, shops, roads and services.

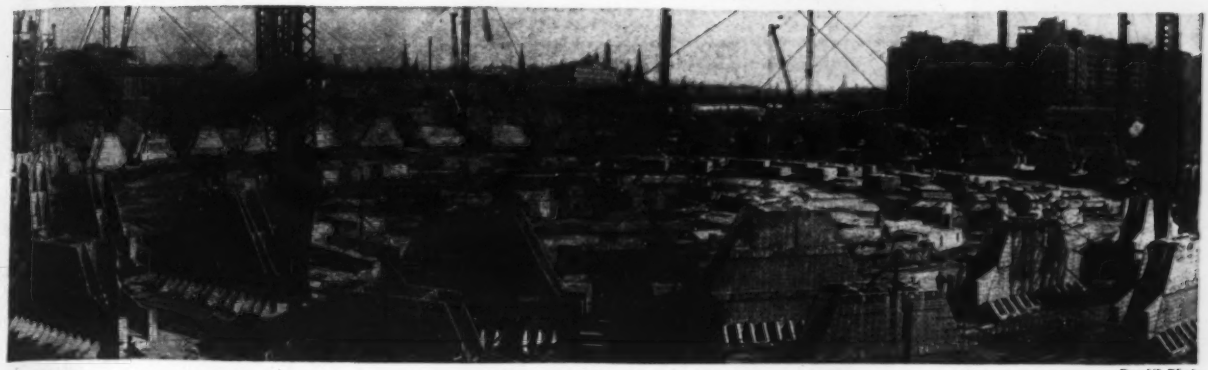
***HOSPITAL BUILDING*, Camp Gordon, Ga.**
Griffin Construction Co., Atlanta, Ga., received a contract from the Navy Department, Jacksonville, Fla. for constructing a $2,335,000 hospital building at Camp Gordon.

***SHIP YARD EXPANSION*, Kearney, N. J.**
Federal Shipbuilding and Drydock Co., Kearney, N. J., will expand its shipbuilding facilities at cost of $2,250,000 under terms of a contract with the Navy Department.

***HOUSING PROJECT*, Langley Field, Va.**
James Baird Co., Inc., Washington, D. C., was awarded the contract to construct 350 family units at Langley Field for the Public Buildings Administration under terms of a $1,126,000 contract.

***QUAY WALL, DREDGING*, Mare Island, Calif.**
The Henry J. Kaiser Co., Oakland, Calif., was awarded the contract for construction of the quay wall, pier, and shops and dredging at Mare Island Navy Yard for the Bureau of Yards and Docks, Navy Department. The work is estimated to cost $3,300,000.

NOTE—Additional bidding and contract news on over 800 projects large and small appear in the Construction News section beginning on page 16.



Prestil Photo

U.S.S.R. starts superstructure for world's tallest building

Under construction since the Fall of 1935, work continues on the Palace of Soviets at Moscow, designed to be more than 1,300 ft. tall or to surpass in height New York's 1,248-ft. Empire State Building, now the tallest man-made structure. Above is a recent photograph showing the foundation in place, and the start on erection of the two circles of steel columns of the building's great central shaft. The outer columns, on a circle of 160 meters diameter, are carried on a circular wall 3.8 meters wide and 22 meters high. The inner circle of columns are carried on a circular wall 4½ meters wide and 140 meters in diameter. Deep beams on radial lines at the column locations connect the two walls at the top and carry a ring of smaller interior columns on short cantilevers.

Underlying material of the site consists of fill and glacial moraine 12 meters deep, 9 meters of broken limestone, 7 meters of marl and clay each about 7 or 8 meters deep all over a deep bed of limestone. The two outer rings of footings are carried down to the second bed of limestone. Though the bottom is 20 meters below water, the work was done in open cuts, by constructing a curtain wall of asphalt grout that shut off seepage.

The Palace of Soviets will have a maximum column load of 23,600,000 lb. as compared to 10,340,000 lb. in the Empire State Building. The gross bearing on the second bed of limestone will be 40,000 lb. per sq. ft. The foundations were designed by Moran, Proctor, Freeman & Mueser, New York.

Suit against Hartford commission dropped

Failure of the Middle West Construction Co., Inc., Cincinnati, Ohio, to file a required certificate to do business in the state of Connecticut has led to withdrawal of a suit pending in the Superior Court by the company against the Metropolitan District Commission of Hartford. The Cincinnati firm sought to collect $75,000 extra pay claimed due for additional work on a sewer contract executed in 1937.

The company built a sewer along the north branch of the Park River near Woodland street in Hartford for $135,000. Unusual difficulties were encountered, requiring extra work, it was alleged.

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Increased Mexican construction expected

Increased building and other construction activity is expected for Mexico as a result of the settlement of the political situation there. When Gen. Manuel Avila Camacho took office as president the political turmoil of several months ended.

Excepting government works and some private undertakings of an urgent nature, building construction in Mexico has been in much of a lull for several months. Jesus de la Garza, the new minister of communications and public works in Mexico, announces that the federal government will intensify the national highway construction program. This activity promises that American building supply firms will sell more to Mexico, for the ministry has made known that there is ample money in sight to carry on all these works to completion. Private investors in building construction also have funds for construction.

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Tolls reduced on two California bridges

Tolls for vehicles on the Carquinez and Antioch bridges in California have been reduced, some by as much as 20 per cent. The new schedule for the Carquinez span calls for 30c. for automobiles, 25c. for auto-drawn trailers, $1 for buses, 15c. for motorcycles, and for trucks and truck trailers according to gross weight. Those for the Antioch Bridge are the same, except for buses, which are 75c., and a cheaper gross-weight for trucks and truck trailers.

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Charity Hospital builder sues for extra pay

Burkes Brothers, New Orleans contractors, have filed suit for claims totaling about $40,000 in connection with the construction of the nurses home of the Charity Hospital project in New Orleans. The court is asked to set aside a report of an arbitration committee returned to the board of administrators on Dec. 6. Members of the arbitration committee are members of the administration board.

Chlorination and flushing purify Rochester water

Six days of chlorination and flushing of mains has restored the Rochester, N. Y. water supply to normal purity standards, following inadvertent contamination of the system with sewage-polluted Genesee River water on Dec. 11 (*ENR*, Dec. 19, 1940, p. 805).

No typhoid cases had appeared up to Dec. 23, according to Dr. Arthur M. Johnson, city health officer, but more time is needed before danger of infection is completely past. About 11,000 persons have already been inoculated with typhoid vaccine. A great many cases of intestinal disturbance appeared within a few days following the water contamination but these have disappeared.

The municipal supply was contaminated with 4,000,000 gallons of river water pumped through an interconnection with the city's separate fire protection system. Emergency chlorination measures were instituted by connecting portable solution-feed chlorinators to each of the four mains leading from a distribution reservoir. Dosages as high as 2 parts per million were administered, according to K. A. Keirn, Buffalo district manager of Wallace & Tiernan, Inc., suppliers of the chlorinating equipment.

In addition a 10 per cent solution of high-test hypochlorite was employed in order to quickly treat outlying mains. This solution was pumped into the mains through hydrant connections while nearby hydrants were flushed.

WASHINGTON HIGHLIGHTS

THE PROCUREMENT Division of the Treasury, which is handling the Public Building Administration's experiment in centralized buying of facilities for defense housing, has let its first contracts. Although prices obtained were not revealed, they are regarded by the division as most satisfactory. Officials say they have encountered no resistance in the trade to dealing in large lots on an f.o.b. manufacturer basis. Briggs Manufacturing Co. of Detroit will furnish $475,582 worth of steel bathtubs—believed to cover some 20,000 to 30,000 units. Youngstown Pressed Steel of Warren, Ohio, has a $53,400 contract for bathtubs, and Williamson Heater Co. of Cincinnati has a $38,885 contract for something less than 1,000 warm air furnaces, blowers, and automatic heat regulating equipment.

IN SPITE of the announced policy of cutting down public works next year, there appears a good chance that the Clarks Hill power and navigation project on the Savannah River in Georgia may go through. Senator Russell of Georgia recently urged the President to make an exception of this project and was told that the decision would have to be made by the Defense Commission. It is now learned that, although the commission has not yet been asked to pass on the project, it will probably look favorably upon it if asked to do so.

LANDING FIELD surfaces built in factories are being experimented with by the War Department. These portable landing mats, consisting of steel grills, in sections small enough to be portable, can be placed over soft spots in a temporary landing field, or a whole field that is too soft to be used normally can be covered. The French were using a similar device last Spring. The Corps of Engineers has just ordered its first full-size mat from Irving Subway Grating Co. for $203,845.

ALTHOUGH lumber prices have settled back to some extent from their recent high levels, it is believed that a further recession is necessary to bring such prices to a reasonable level, according to Leon Henderson, member of the National Defense Advisory Commission in charge of price stabilization.

New and old Indiana highway department heads

Earl B. Lockridge, left, since 1919 with the Indiana State Highway Department, has been made chief engineer. He succeeds Merton R. Keefe, right, who has been head of the department and chief engineer since 1932. Lockridge began in the bridge section of the department when the department was first organized. At that time there was but 3,200 miles of road under state supervision; now total mileage under maintenance is 10,000. For a time he served as district engineer for the northwest part of the state, later was made assistant engineer of maintenance, and then two years ago assistant chief engineer. He is a graduate of Indiana University.

Keefe resigned to join Russel B. Moore Engineering Co. as chief engineer of the new naval ammunitions storage depot located at Burns City, Ind. From 1902 until 1909 Keefe worked with the Baltimore & Ohio Ry. From 1909 to 1932 he was with Ulen & Co., New York, working in many parts of the United States on sewer construction, water supply, pumping plants and tunnel construction. For the same firm he also spent some time in Poland covering surveys and design of water supplies, two years in Athens, Greece, as manager of a new water supply for the city of Athens, and on construction in Chile and Persia.

Heavy diversion flushes Chicago drainage channel

Results achieved by the recent 10-day flushing of the Chicago Main Drainage Canal and Brandon Road Pool with 10,000-cfs. diversion from Lake Michigan are considered as successful as the engineers of the Sanitary District had expected (*ENR* Nov. 28, 1940, p. 717). The Chicago River and the canal where velocities of from 2 to 2½ fps. were obtained were cleansed of practically all fluffy sludge and suspended matter. Not much of the 1,000,000 cu. yd. of sludge deposits in the pool back of Brandon Road Dam was moved. In fact the suspended solids going into the pool were several times greater than those in the outflow. Tests for suspended matter and biochemical oxygen demand must be taken into account to get both quantitative and qualitative results, and some time must elapse before calculation and tabulations are made. Enough is known, however, to indicate that for some time the deposits in the river and channel will not absorb the oxygen at the former rate.

Unfortunately the high rate of diversion started Dec. 2 on one of the coldest days of the year (5 below zero) with the level of Lake Michigan at −1.0. A shift in the wind during the next eight or nine days reduced this level to −1.5. Thus the 10,000-cfs. diversion was only possible for a short time, averaging but 8,500 cfs. This figure does not include the sewage flow of some 1,500 cfs. In consequence the scouring ability was 12 to 15 per cent less than hoped for.

Suspended solids in the water entering and leaving the pool were 15 ppm. at the start. Within a day the entering figure was 500, tapering off to 150 ppm. on the last day. The outflow rose slowly to 100 ppm. and decreased to 60 ppm. on the last day. Both inflow and outflow dropped to 20 ppm. on Dec. 12. F. W. Mohlman, chief chemist of the sanitary district, says this cleansing will permit the flow next summer to come to the pool with much less oxygen depletion.

A revision has been made in the petition for diversion over the 1,500 cfs. now permitted. It calls for sufficient diversion to maintain 1 ppm. of dissolved oxygen in the pool. A table as follows is the estimated rate of diversion which is varied to suit temperature changes:

	1941	1942
Jan.	1,500	1,500
Feb.	1,500	1,500
March	1,500	1,500
April	2,500	1,500
May	4,500	3,500
June	6,500	5,500
July	7,500	6,500
Aug.	6,500	4,500
Sept.	4,500	2,500
Oct.	2,500	1,500
Nov.	1,500	1,500
Dec.	1,500	1,500

MEETINGS

KANSAS CONTRACTORS ASSOCIATION, annual meeting, Kansas City, Mo., Jan. 9–10.

AMERICAN SOCIETY OF CIVIL ENGINEERS, LOUISIANA SECTION, St. Charles Hotel, New Orleans, Jan. 10.

LOUISIANA ENGINEERING Society, annual meeting, St. Charles Hotel, New Orleans, Jan. 10–11.

COLORADO ASSOCIATION OF HIGHWAY CONTRACTORS, annual meeting, Denver, Jan. 15.

NATIONAL SAND and Gravel Association, convention and exposition, Netherland Plaza Hotel, Cincinnati, Jan. 15–17.

NATIONAL PAVING Brick Association, annual meeting, Commodore Perry Hotel, Toledo, Ohio, Jan. 15–17.

AMERICAN SOCIETY of Civil Engineers, winter meeting, New York, Jan. 15–18.

NEW YORK STATE SEWAGE WORKS ASSOCIATION, 13th annual meeting, Hotel McAlpin, New York City, Jan. 16–18.

ASSOCIATED GENERAL CONTRACTORS OF AMERICA, International Branch, annual convention, Salt Lake City, Jan. 17–18.

ASSOCIATION OF PROFESSIONAL ENGINEERS OF THE PROVINCE OF ONTARIO, Royal York Hotel, Toronto, Canada, Jan. 18.

NEW YORK STATE COUNTY HIGHWAY SUPERINTENDENTS ASSOCIATION, annual meeting, Albany, N. Y., Jan. 21–22.

CANADIAN CONSTRUCTION ASSOCIATION, annual convention, Mount Royal Hotel, Montreal, Jan. 21–23.

CONSTRUCTORS ASSOCIATION of Western Pennsylvania, annual meeting, William Penn Hotel, Pittsburgh, Jan. 23.

AMERICAN WOOD-PRESERVERS' Association, annual meeting, Coronado Hotel, St. Louis, Jan. 23–25.

ASSOCIATED EQUIPMENT Distributors, Commodore Hotel, New York City, Jan. 24–26.

AMERICAN SOCIETY of Heating and Ventilating Engineers, annual meeting, Hotel Muehlebach, Kansas City, Jan. 27–29.

AMERICAN ROAD BUILDERS' Association, 38th annual convention, Pennsylvania Hotel, New York, Jan. 27–31.

NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS, annual convention, meeting jointly with the Illinois Society of Engineers, Hotel Sherman, Chicago, January 30-February 1.

Laminated wood arches used for this bridge

The engineering department of the city of Madison, Wis., has erected over the Yahara River a foot bridge of laminated wooden arch construction. W. J. Peterson of the city engineer's office, in the collaboration with staff members of the Forest Products Laboratory, designed the structure.

The bridge consists essentially of two 73-ft. arches fabricated from nominal 1 x 8-in. southern pine boards surfaced on both sides, bent to the required curvature, and bonded together with casein glue. The arches, which vary in depth from 15 in. at the center of the span to 30 in. at the abutments, are spaced 6 ft. center to center with metal cross-bracing to guard against sway. The floor consists of nominal 3 x 8-in. "foundation grade" redwood plank laid with quarter-inch spaces and attached to the arches with wood screws.

For protection against the weather two coats of aluminum paint were applied at the manufacturing plant to the vertical and top and bottom surfaces of the arch. This was followed by an additional coat after the arches were in place. The ends of the arches are set in asphalt mastic to keep them from direct contact with the concrete abutments. Each rib is roofed with a strip of heavy asphalt paper, which is expected to seal around the screws attaching the flooring plank. The abutments of the bridge rest on creosoted wood piles.

The arch ribs were fabricated by Unit Structures, Inc., at its Peshtigo, Wis. plant. J. M. Walsh, a Madison contractor, erected the structure.

Jury named for student bridge contest

Shortridge Hardesty, Waddell & Hardesty; Walter H. Weiskopf, Weiskopf & Pickworth; John T. Briggs, and M. W. Del Gaudio, New York architects; and Theodore R. Kendall, engineering editor of *The American City* have been appointed by the American Institute of Steel Construction to select the prize-winning design in the Student's Annual Bridge Design Competition.

This competition has been held annually during the past 12 years. Designs judged to be the first, second and third best will be awarded prizes of $200, $100 and $50 respectively. The jury will meet in New York Feb. 19 to make its selections.

The subject of the competitive design is a steel overpass bridge to carry a single track railroad over a highway. Drawings must be received at the executive offices of the institute, 101 Park Ave., New York City, not later than Feb. 10.

Control of East Hartford utilities changed

The Hartford, Conn., Metropolitan District Commission will take over the water and sewage facilities of the city of East Hartford, which is on the opposite bank of the Connecticut River.

An issue of $400,000 in water-supply extension bonds has been authorized as a part of the transaction. Proceeds will be used for the East Hartford water system and will include installation of a large supply pipe line from the east end of the Bulkeley Memorial Bridge to a central point in East Hartford. A purification works will be built for treating the water of an East Hartford reservoir. The town's water will be systematically metered.

Other work contemplated in East Hartford but not included in that to be financed by this bond issue includes construction of a sewage treatment plant. The use of Hartford's sewage treatment system for the City of East Hartford is not feasible.

OBITUARY

FREDERICK L. FORD, 69, former city engineer of both Hartford and New Haven, Conn., died at New Haven Dec. 18. From 1902 to 1911 he was city engineer of Hartford, and from 1920 to 1926 held a similar post at New Haven.

PETER OSCAR LEWIS, 69, superintendent of the Westport, Conn., highway department for the last eleven years, died recently.

HENRY G. KINDRED, 73, civil engineer with the Big Four R. R. for 25 years who retired in 1936, died recently in Indianapolis.

RAY W. BENNETT, formerly office engineer and of late years assistant office engineer with the New Mexico highway department, died at Santa Fe recently.

LEWIS K. SNELL, 72, for more than thirty years a builder and contractor in Bath, N. Y., died Dec. 16.

ALBERT T. KELLER, 71, former chief of construction for the U. S. Steel Co., died Dec. 20, at his home in Bethlehem, Pa. Keller retired in 1930, but recently was called back to duty on defense work.

ARTHUR H. BELL, 85, old-time surveyor and drainage engineer, died at his home in Bloomington, Ill., Nov. 12. He was at one-time assistant city engineer of Bloomington. He had done a great deal of work establishing boundary lines and property limits and in the design of drainage work in Illinois and Indiana.

DANIEL L. LEE, 86, retired civil engineer, who worked for 27 years with the Delaware, Lackawanna and Western R.R., died Dec. 18 at Factoryville, Pa.

GEORGE MILES, 80, retired engineer who aided in the construction of the Canadian Pacific R.R., and who worked on the promotion and engineering of the inland waterways system in Florida, died Dec. 18 at Pomfret Inn, Conn.

CHARLES F. KEELER, 82, retired civil engineer who worked for 47 years in the Susquehanna Division for the Erie R.R., died Dec. 17 in Hornell, N. Y.

E. E. HOUGHTON, 70, construction engineer of Birmingham, Ala., died last week in that city.

FRANK D. H. MACCARMACK, retired construction engineer, died Dec. 17 in Alexandria, La. He was a graduate of Rutgers University and has studied engineering in England.

EDWARD N. WOOLSTON, 58, president of the General Paving Co., Allentown, Pa., died Dec. 18 at his home in that city.

FRED R. LIGGETT, 52, an American railroad construction engineer for five years technical adviser for the National Railways of Mexico, recently died in Mexico City. He had worked with various American middlewestern railroads before going to Mexico.

CHARLES STIMSON, 72, civil engineer of Los Angeles and formerly of Council Bluffs, Ia., died recently in Los Angeles.

TRUMAN S. MORGAN, 72, president of the F. W. Dodge Corp., died Dec. 22 in New York City.

Louisville sewage project would cost $5,700,000

Harrison P. Eddy, Jr., of the consulting firm of Metcalf & Eddy, Boston, and Woolsey M. Caye, technical engineer of the Louisville commissioners of sewage, have reported to the commission that it would cost $5,700,000 to provide sewage treatment for the city of Louisville. Work would include construction of a $4,100,000 Ohio river interceptor sewer and $1,600,000 for the sewage treatment plant proper.

The treatment would be 45 per cent as recommended in the 1938 report of the Ohio Valley Compact. Treatment of Louisville sewage would cost $410,000 annually, once the plant is built.

CONTRACTS AND CAPITAL

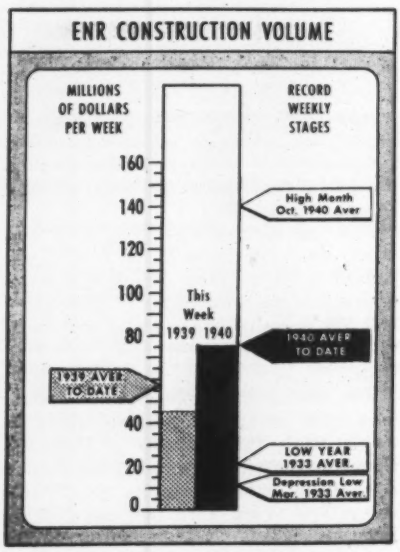
ENGINEERING CONSTRUCTION awards for the short week due to the Christmas Day holiday total $75,341,000. The week's volume brings the 1940 total to $3,987,243,000, the highest engineering construction total ever reported, topping the previous record of $3,950,315,000 in 1929 by 1 per cent, and last year's total by 33 per cent. Private awards for the year gain 31 per cent over a year ago; and public construction tops 1939 by 34 per cent due to the 311 per cent increase in federal work.

The week's volume is 68 per cent higher than in the corresponding 1939 week, the seventeenth consecutive week in which current awards have topped their respective totals of a year ago. Private awards are 22 per cent above a year ago, and public construction is up 91 per cent.

In the classified construction groups, streets and roads, and unclassified construction exceed their totals of a week ago; and sewerage, industrial and public buildings, earthwork and drainage, streets and roads, and unclassified gain over last year.

New capital for construction purposes for the week totals $10,902,000, an increase of 10 per cent over the volume for the corresponding 1939 week.

New construction financing for the year 1940, $3,894,743,000, reaches the highest point in the last decade, and tops the 1939 volume by 62 per cent.



CONTRACTS

(Thousands of dollars)

	Week Ending Dec. 28 1939	Dec. 19 1940	Dec. 26 1940
Federal	$4,656	$69,864	$38,307
State & Municipal	25,294	21,942	18,985
Total public	$29,950	$91,806	$57,292
Total private	14,778	39,329	18,049
TOTALS	$44,728	$131,135	$75,341
Cumulative 1940	(52 weeks)		$3,987,243
1939	(52 weeks)		$3,002,856

Note: Minimum size projects included are: **Waterworks and waterways** projects, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

NEW PRODUCTIVE CAPITAL

	Cumulative 1939 52 Wks.	1940 52 Wks.
NON-FEDERAL	$1,276,746	$1,612,782
Corp. Securities	214,197	390,212
State & Mun.	568,978	581,918
R.E.A. loans	89,445	40,000
U.S.H.A. loans	215,811	218,704
R.F.C. loans	—2,117	197,948
Fed. Aid-Hwy.	190,000	184,000
FEDERAL	$1,128,928	$2,281,961
TOTAL CAPITAL	$2,404,774	$3,894,743

FHA MORTGAGES

	Week Ending Dec. 23 1939	Dec. 14 1940	Dec. 21 1940
Selected for appraisal	$15,748	$20,203	$ *
Cumulative 1940	(51 weeks)		$ *
1939	(51 weeks)		$1,113,069

* Subject to revision.

ENR INDEX NUMBERS

Index Base=100		1913	1926
Construction Cost	Dec., '40	249.12	119.75
Building Cost	Dec., '40	208.19	112.54
Volume	Nov., '40	831	145

CONTRACT UNIT PRICES

What contractors are bidding on different kinds of construction work

POWERHOUSE FOUNDATION OREGON

OWNER: Bonneville Project, Portland, Ore.; Maj. R. H. Elliott, district engineer, U. S. Corps of Engineers.

PROJECT: Construction of concrete powerhouse foundation structure and intake; concrete retaining wall; and appurtenances, including cofferdams; at Bonneville, Ore.

CONDITIONS: Rail, highway and water transportation facilities available. Contractor to furnish all materials and complete work in 18 months. Stipulated wage rates on the project are: skilled labor, $1.50 per hr.; semi-skilled, $1.10; and common labor, 70c. per hr.

BIDS: Five bids were received August 30, 1940, ranging from the contract low of $3,131,606 to $3,738,860.

LIST OF BIDDERS:

1. Puget Construction Co., Seattle, Wash. (contract) $3,131,606
2. Arundel Corp., Baltimore, Md., and L. E. Dixon Co., Los Angeles, Calif. 3,487,854
3. General Constr. Co., Seattle, Wash., and Columbia Constr. Co., Oakland, Calif. 3,575,144

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Removal of fishway	L.S.	$21,200.00	$50,000.00	$100,000.00
2. Replace railroad track	L.S.	4,700.00	4,530.00	5,000.00
3. Common excavation	720,000 c. y.	.85	.75	.60
4. Rock excavation	7,000 c. y.	3.00	7.00	9.00
5. Crib footing excavation	1,400 c. y.	1.06	2.50	3.00
6. Crib fill, common	13,000 c. y.	.32	.40	.35
7. Crib fill, select impervious	5,700 c. y.	.32	.60	.50
8. Crib toe fill	3,500 c. y.	.37	.40	.40
9. Impervious blanket	5,500 c. y.	.37	1.50	.60
10. Steel sheet piling, downstream	660,000 lb.	.0613	.08	.06
11. Fir piles	24,000 l. f.	.42	.65	.50
12. Crib timber and lumber	1,105,000 f. b. m.	.051	.08	.08
13. Remove cofferdam	20,000 c. y.	1.22	1.50	1.00
14. Pumping	40,000 ac. ft.	2.40	2.90	3.00
15. Steel sheet piling, cellular	1,800,000 lb.	.0577	.07	.07
16. Cellular cofferdam fill	6,400 c. y.	.21	.40	.25
17. Structure backfill	36,000 c. y.	.32	.50	.60
18. Backfill in foundation cells	11,000 c. y.	.64	.30	.50
19. Embankment	220,000 c. y.	.21	.25	.30
20. Hand-placed riprap	3,600 c. y.	3.56	4.20	6.00
21. Dumped riprap	2,300 c. y.	2.93	2.00	1.50
22. Class A concrete	91,500 c. y.	10.05	13.00	14.00
23. Class B concrete	25,000 c. y.	8.35	11.60	9.00
24. Extra cement	2,000 bags	.58	.55	.53
25. Reinforcing steel	15,000,000 lb.	.0425	.04	.04
26. Structural steel, carbon	800,000 lb.	.12	.08	.12
27. Structural steel, rust resist.	600,000 lb.	.139	.10	.15
28. Nickel steel	97,000 lb.	.25	.12	.15
29. Corrosion-resist. steel	8,000 lb.	.564	.50	.60
30. Steel castings	3,000 lb.	.356	.20	.35
31. Steel rails	100,000 lb.	.047	.07	.08
32. Iron castings	8,000 lb.	.17	.20	.15
33. Rolled bronze	9,500 lb.	.438	.60	.50
34. Bronze castings	200 lb.	.89	1.00	.75
35. Wr. iron pipe and fittings, galv.	5,000 lb.	.18	.20	.20
36. Cast iron pipe, flanged	6,000 lb.	.16	.12	.15
37. Cast iron soil pipe, fittings	8,000 lb.	.16	.08	.10
38. Steel pipe, black	15,000 lb.	.08	.12	.37
39. Fabr. steel plate pipe	115,000 lb.	.076	.06	.10
40. Steel pipe fittings, welding type	6,500 lb.	.94	.13	.90
41. Brass pipe and fittings	50 lb.	1.00	1.00	.50
42. Floor drains	300 lb.	.60	.60	.30
43. Ladders	5,000 lb.	.198	.18	.25
44. Floor grating	41,000 lb.	.10	.15	.15
45. Anchor bolts and inserts	7,000 lb.	.20	.15	.50
46. Copper water stops	7,000 lb.	.50	.65	.60
47. Timber grill for fishway	20,000 f. b. m.	.045	.10	.20
48. Timber, temp. fish ladder	270,000 f. b. m.	.073	.10	.19
49. Concrete excavation	30 c. y.	10.00	10.00	25.00
50. Drilling grout holes	750 l. f.	2.00	1.00	2.00
51. Pressure grouting	300 c. f.	3.00	4.00	3.00
52. 5-in. galv. conduit, fittings	50 l. f.	2.70	1.00	3.00
53. 3-in. galv. conduit, fittings	120 l. f.	1.10	.80	1.40
54. 2-in. galv. conduit, fittings	240 l. f.	.70	.40	1.00
55. 1½-in. galv. conduit, fittings	1,500 l. f.	.55	.30	.80
56. 1¼-in. galv. conduit, fittings	800 l. f.	.50	.25	.70
57. 1-in. galv. conduit, fittings	2,600 l. f.	.40	.20	.40
58. ¾-in. galv. conduit, fittings	1,300 l. f.	.35	.15	.35
59. 4-in. Transite "Korduct" or equal, Orangeburg fiber end-bells	400 l. f.	.95	.40	1.00
60. 1-in. Everdur or equal conduit, fittings	250 l. f.	1.00	.70	1.10
61. ¾-in. Everdur or equal conduit, fittings	25 l. f.	1.00	1.00	1.00
62. Elec. cabinets and spec boxes, galv. sheet steel	1,200 lb.	.50	.50	.35
63. Cast brass or Everdur boxes	40 lb.	1.00	1.20	.90
64. Pier nose lights	24 ea.	22.00	21.00	20.00
65. Flood light sockets and covers	12 ea.	50.00	40.00	50.00
66. Copper ground cable, bare	100 lb.	.65	.30	.50
67. Rail bonds	85 ea.	1.40	2.00	2.00

BRIDGE, HIGHWAY WIDENING OHIO

OWNER: Ohio State Highway Department, Columbus, Ohio.

PROJECT: Construction of continuous steel beam bridge with concrete deck and substructure; consists of two spans 49½-ft. center to center bearings; roadway 40-ft. wide; on State Highway 550, Toledo, Lucas County, Ohio. In addition, on State Highway 55 in Lucas County there is a project involving widening 762-ft. of highway by 10-ft. Strip is to be 3-in. brick wearing course on concrete base.

CONDITIONS: Roadway project to be completed by the end of the year; bridge completion scheduled for September 30, 1941. Contractor to furnish all materials for both jobs. Highway transportation facilities available. Wage rates specified are: skilled labor, $1.00 to $1.50 per hr.; semi-skilled, 60c. to $1.10; and common labor, 40 to 60c. per hr.

BIDS: Two bids were received November 15, 1940 for the bridge work, $51,099 and $51,343. Engineer's estimate $52,000. On the widening work, only one bid was received November 15, $5,987. Engineer's estimate, $6,130.

Bridge

LIST OF BIDDERS:

1. A. Bentley & Sons Co., Toledo, Ohio (contract) $51,099
2. George A. Trombley, Toledo, Ohio 51,343

Item	Quan.	Unit Prices (1)	(2)	(3)*
1. Cofferdams and pumping	L. S.	$10,676.28	$4,715.00	$4,500.00
2. Excavation, uncl.; structures	1,200 c. y.	2.25	1.00	2.00
3. Class C conc.; superstructure	158 c. y.	21.50	19.00	27.00
4. Cl. E conc., abutments and piers	570 c. y.	18.00	16.40	20.00
5. Class E conc., footings	329 c. y.	11.00	11.00	13.50
6. Type A waterproofing	420 s. y.	1.00	1.20	.65
7. Type B waterproofing	80 s. y.	2.00	2.35	2.00
8. Reinforcing steel	97,160 lb.	.039	.045	.05
9. Structural steel	144,710 lb.	.05	.07	.07
10. Steel castings	6,480 lb.	.16	.28	.18
11. Field painting, items 9 and 10	151,190 lb.	.002	.005	.0033
12. ½-in. premolded exp. joint filler	59 s. f.	.20	.18	.40
13. ¼-in. sheet lead plates	35 s. f.	1.00	.20	2.00
14. Bridge railing (concrete)	329 l. f.	6.00	7.00	5.00
15. First test pile (timber)	L. S.	117.00	120.00	250.00
16. 12-in. timber piling	4,700 l. f.	.50	1.00	.90
17. Bridge lighting system (light units not included)	L. S.	600.00	650.00	250.00
18. Porous backfill	200 c. y.	2.00	2.65	2.00
19. Erect, maintain lights, signs, etc.	L. S.	340.00	1,750.00	150.00
20. Premium on industrial insurance	L. S.	1,675.00	1,625.00	887.87

* *Engineer's estimate.*

Roadway

LIST OF BIDDERS:

1. S. E. Johnson Co., Toledo, Ohio (contract) $5,987

Item	Quan.	Unit Prices (1)	(2)*
1. Uncl. roadway excavation	342 c. y.	$0.80	$1.00
2. Remove, dispose of exist. pavemt.	80 s. y.	.55	.60
3. Remove, dispose brick wearing crse.	21 s. y.	.35	.30
4. Remove 4-in. by 14-in. stone header, for re-use	112 l. f.	.25	.20
5. Remove and store 4-in. by 14-in. stone header	21 l. f.	.35	.20
6. Remove, re-use 5 x 18-in. st. curb	691 l. f.	.25	.15
7. 5-in. ext. qual. drain tile	649 l. f.	.30	.60
8. Portland cem. conc. base crse., 10-8-8-10-in.	907 s. y.	2.50	2.40
9. 3-in. brick wearing course	928 s. y.	2.30	2.40
10. Reset 4 x 14-in. stone header	112 l. f.	.45	.40
11. Reset 5 x 18-in. stone curb	627 l. f.	.45	.40
12. 5 x 18-in. sandstone curb, mach. dressed, Berea, Amherst or equal	20 l. f.	1.80	2.00
13. Excav., uncl. for struct.	1 c. y.	2.00	2.00
14. Adjust. exist. conc. c. basin to grade	1 ea.	20.00	15.00
15. Special curb inlet	1 ea.	20.00	40.00
16. 12-in. rein. conc. pipe, culv	6 l. f.	1.50	2.00
17. Std. No. 1 light manhole fr. and cov.	1 ea.	20.00	20.00
18. Premium on industrial insurance	L. S.	150.00	75.45
19. Maintain traffic, etc	L. S.	160.00	190.00

* *Engineer's estimate.*

CONSTRUCTION REPORTS

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York
ELSIE EAVES, Manager *SCOTT McLEOD, Statistician*
(Daily service also available—Write for details)

Location of ENR Correspondents

Symbols and Abbreviations Include:

† Federal Government
★ Project of $500,000 or over
ENR Engineering News-Record
CD Engineering News-Record Construction Daily

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger; water supply, earthwork, waterworks, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

Classes of Construction

(Named in order of Listing)

Water Supply
Sewers, Waste Disposal
Bridges, Grade Cross'gs
Streets & Roads
Earthwork, Waterways
Unclassified
Latin America
Public Buildings
Commercial Buildings
Industrial Buildings

Stages Reported

PROPOSED: (except Streets & Roads):

BIDS ASKED (new announcements only. For full calendar, see also preceding issues of ENR);

LOW BIDDERS: All low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

WATER SUPPLY

PROPOSED WORK

Ga., Savannah — Approved $240,000 bond issue, c.i. watermains.

Mich., Iron Mountain—WW imprvs., tank, watermains, in Ruell and Stridde addns. $55,000. Federal Eng. Co., Central Office Bldg., Davenport, Ia., engrs.

Mo., Kirkwood (St. Louis P. O.)—$35,000 bond election Jan. 4, exten., imprv. municipal water plant. Over $35,000. CD 11/25—ENR 11/28.

N. Y., Niagara Falls—City Council, City Hall, exten. city water intake tunnel into west channel of Niagara River. Over $350,000. H. W. Clark, city engr.

N. Y., Warsaw—Village Trustees, furnishing, installing water meters and pump. equip. $16,000. H. Brown, village atty., in charge.

★**O., Canton**—C. M. Maratta, chn. Water Comn., imprv. water sys. $2,000,000. G. A. Reese, Canton Bank & Trust Bldg., engr.

N. S., Springhill—Cumberland Railway & Coal Co. Ltd., Springhill, water supply. $20,000.

Ont., Port Talbot (P. O. Fingal)—Dominion Govt., Ottawa, pump. station, filtration plant, 4½ mi. watermains. $40,000. Dpt. Transport, Ottawa, engrs.

BIDS ASKED

Bids Asked January 3

Ariz., Flagstaff—Pipe lines, water treatment, filtration and pump. plant. $225,000. Taylor & Taylor, 725 S. Spring St., Los Angeles, Calif., engrs. W. Johannessen, Flagstaff, engr. CD 12/12—ENR 12/19.

Bids Asked January 8

†Tex., Flour Bluff—P. Wks. Officer, Naval Air Station, Courthouse, Corpus Christi, WW sys., rein.-con. reservoir, elevated tank, 2 m.g. rein.-con. ground reservoir, elevated steel tank and tower, water distr. sys. $250,000. Robert & Co., Inc., Bona Allen Bldg., Atlanta, Ga., and Old Federal Bldg., Corpus Christi, archt. CD 11/4—ENR 11/7.

Bids Asked January 14

N. J., Westville—Water supply sys. Over $15,000. Perring & Remington, 509 Cooper St., Camden, engrs.

Bids Asked

†Md., Cheltenham—Navy Dpt., Wash., D. C., water supply and sewage disposal sys. at Naval Radio Receiving Station, Spec. 10075.

LOW BIDDERS

Ore., Portland—Russelville Water Dist., D. G. Fredricksen, secy., Portland. Dec. 6, domestic water sys. from well, 230 g.p.m. capacity, laying 25,000 ft. 4- to 8-in. pipe, fire hydrants, etc., from Soule & Walters, Elma, Wash. **$44,000.** J. H. Lewis, Railway Exch. Bldg., engr.

CONTRACTS AWARDED

Ala., Gadsden—City Water Works Bd., J. C. Inzer, chn., centrifugal pumps and motors for filtration plant (under construction), to Burford, Hall & Smith, 140 Edgewood Ave. N.E., Atlanta, Ga., **$34,743;** tanks, to Chicago Bridge & Iron Co., 1500 N. 50 St., Birmingham, **$68,450.** CD 11/28.

Ala., Hartselle—Bd. City Comrs., exten. WW sys., filtering sys. on Flint Creek and 150,000 gal. reservoir, own forces and **WPA. $72,000.**

Arizona—Salt River Valley Water Users Assn., Water Users Bldg., Phoenix, drilling, casing, perforating 12 wells, to Roscoe Moss Co., 4360 Worth St., Los Angeles, Calif.; 10 wells, to Western Pipe & Steel Co., 5717 Santa Fe Ave., Vernon, Calif. **$72,257.** Bids 11/1. CD 10/25—ENR 10/31.

Ia., Waterloo—Illinois Central System, F. L. Thompson, vice pres. and ch. engr., 135 E. 11 Pl., Chicago, Ill., 160,000 gal. water tank, own forces. **$15,000.**

N, C., Greensboro—C. W. Mengel, dir. P. Wks., Dec. 16, water and sewer imprvs. from Leon Ellis, Greensboro, **$188,260.** CD 12/6.

Que., Beauharnois—British Electric Metallurgical Co. Ltd., Sheffield, England, c/o A. R. Turnbull, c/o St. Laurence Alloys Ltd., Beauharnois, intake pipe, pump. station, day labor. **$35,000.**

†Alaska, Sitka—Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., water supply sys. at new air base, NOY 3570, to Siems-Drake-Puget Sound Co., 2929 16 Ave. S.W., Seattle, Wash. **$22,110.**

SEWERS, WASTE DISPOSAL

PROPOSED WORK

★**Calif., Burlingame**—Ray Park Sub-Division, 1446 Burlingame Ave., making specifications, sewer and water sys., roads and streets in Ray Park sub-division. Est. utilities construction $250,000. Total cost $5,000,000. L. B. Hainline, 307 B St., San Mateo, engr.

Colo., Denver—G. E. Cranmer, mgr. imprvs., bids early in spring sewer construction. Sewer Dist. 3. $107,000. A. K. Vickery, city engr. CD 10/30—ENR 11/7.

Ga., Savannah—Sewers. $175,000 bond issue approved.

Ia., Ames—J. W. Prather, city clk., sewage disposal plant.

Ia., Boone—Storm sewer drain in northeast section of city. $168,000. Seeking WPA funds.

Kan., Topeka—F. W. Knapp, city clk., storm sewers Forest, Atlantic and Kansas Aves., W. Tenth, W. Gordon and Polk Sts. $70,000.

Minn., Wheaton—M. J. Fridgen, village clk., rejected bids Nov. 26, sewage treatment plant. Will probably readvertise. G. M. Orr & Co., 542 Baker Arcade Bldg., Minneapolis, engrs. (**Correction**—status.) CD 12/10.—ENR 12/12, under CA.

Mo., Kirkwood (P. O. St. Louis)—$15,000 bond election Jan. 4, exten., imprv. sewage disposal plants. $40,000.

N. Y., Albany—P. Wks. Comn., City Hall, connecting sewer 17 Ward. Over $25,000. J. McMannus, city engr.

Okla., Oklahoma City—Made preliminary plans storm sewers at municipal airport. $77,000. R. Lee, Jr., City Hall, engr.

Pa., Franklin—Exten. storm water sewerage sys. $25,000-$35,000. J. Snow, city engr.

★**Pa., Phila**—New sewers, $500,000; sewage disposal plant imprvs., $970,000. Funds available. J. H. Neeson, dir. P. Wks.

★**S. C. Spartanburg** — T. W. Woodworth, mayor voted $300,000 bonds, sewerage sys., incinerator addn., new fire station, expansion memorial airport, and streets, $1,500,000.

Wash., Omak—Sanitary sewers. $100,000. J. O. Mackey, mayor. Seeking WPA allot.

Wis., Watertown—A. W. Duffy, city clk., storm and sanitary sewers, imprv. sewage treatment plant. Over $25,000. R. S. Podolske, city engr.

Alta., Edmonton—Sewer in Rupert St. area. $75,000. A. W. Haddon, City Hall, engr.

BIDS ASKED

Bids Asked December 30

N. Y., Syracuse—Dpt. Contr. & Purchase, City Hall, 12 in. combined sewer in Onondaga Ave. from South Ave. to end of street. Over $25,000. A. Smingler, comr. in charge.

Bids Asked January 8

Md., Baltimore—City, c/o Bd. Awards, City Hall, sanitary sewers, Sewer Contr. 350, Bureau Sewers, Municipal Office Bldg., engrs.

Mich., Mason—Ingham Co. Road Comn., Mason, 369 ft. double barreled sewer, consisting 2 parallel sewers, 90 in. inside dia., connection to monolithic concrete sewer, etc. About $25,000. J. G. Rakowsky, Mason, engr.

†Tex., Flour Bluff—P. Wks. Officer, Naval Air Station, Courthouse, Corpus Christi, revised plans complete sanitary sewerage sys., 8- to 18-in. mains, disposal plant, etc. $200,000. Robert & Co., Inc., Bona Allen Bldg., Atlanta, Ga., and Old Federal Bldg., Corpus Christi, archt. CD 11/4—ENR 11/7.

Bids Asked January 23

N. Y., Industry—State Dpt. Social Welfare, 112 State St., Albany, sewage disposal plant at agricultural and industrial school. $48,044. W. Haugaard, comr. Architecture, and T. F. Farrell, ch. engr. State Dpt. P. Wks., both State Bldg., Albany. CD 2/6—ENR 2/8.

Bids Asked

†Md., Cheltenham—Navy Dpt., Wash., D. C., incinerator building, water heater, piping and accessories at Naval Radio Receiving Station, Spec. 10087.

LOW BIDDERS

Md., Towson—Bd. Comrs. Baltimore Co., Dec. 9, furnishing, laying 3,600 lin. ft. 8 in. terra cotta sewers, appurtenances, from Guthrie & D'Adamo, 3726 Dolfried Blvd., Baltimore, **$27,386.** CD 11/29—ENR 12/5.

CONTRACTS AWARDED

Idaho, Pocatello—Sewers in 2½ mi. area on east side of city. **WPA. $78,888.**

Minn., South St. Paul—J. F. O'Donnell, city recdr., grit-removal equip. and piping changes at municipal sewage treatment plant, incl. drag conveyor, pneumatic ejector unit, compressor, air storage tanks, to B. S. Andrus, South St. Paul, **$39,030.**

Mo., Carsonville (St. Louis P. O.)—Walton Road Sanitary Sewer Dist. of St. Louis, c/o Dr. F. G. Bickel, J. B. Rebstock and E. W. Hurst, Trustees, 8924A St. Charles Rock Rd., St. Louis Co., sanitary sewerage sys., sewage treatment plant complete with auxiliary equip., piping, accessories, etc., sanitary sewers, in St. Louis Co. Dist. **WPA.** Over **$324,000.** E. A. Fulton, 3 S. Meremec Ave., Clayton, St. Louis, engr. CD 9/23—ENR 9/26.

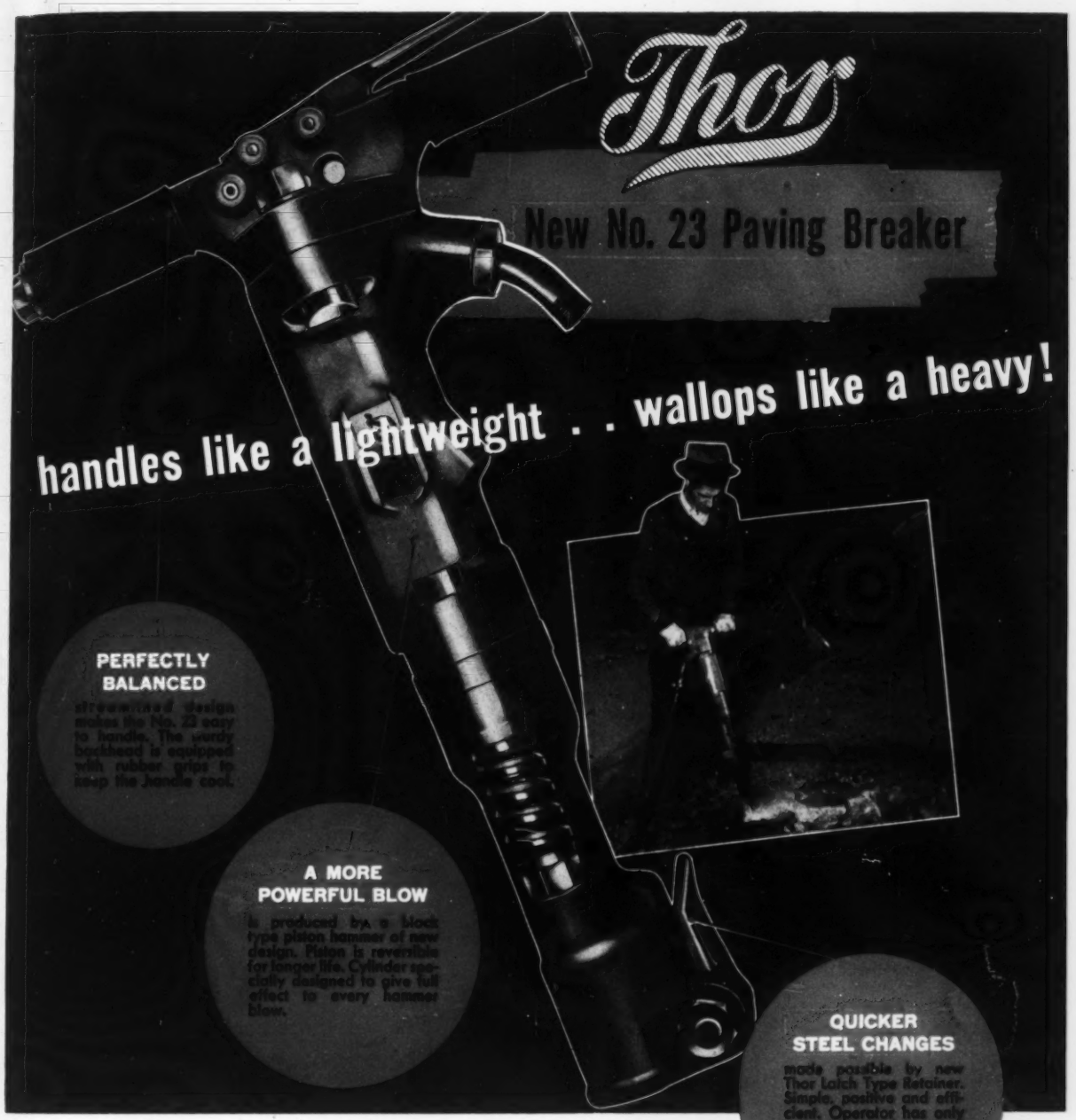
Mo., Normandy (St. Louis P. O.)—Normandy Sanitary Sewer Dist., c/o Secretary, Normandy, sewage treatment plant, complete with auxiliary equip., piping, accessories, etc., in area bounded by North Ave., Geiger Rd., Natural Bridge Rd., and northern section Glen Echo Country Club, old Florissant, Lucas, Hunt and Carson Rds. **WPA. $355,662.** CD 9/16—ENR 9/28.

N. J., Marlboro—Brick sewage disposal plant addn., **WPA. $55,100.** CD 12/3—ENR 12/5.

N. J., Newark—Excavating, sheathing, sanitary sewers, **WPA. $58,300.** J. Costello, City Hall, city and WPA engr.

N. J., Newark—Essex Co., Hall of Records Bldg., excavating, sheathing and sanitary sewers various roads. **WPA. $56,500.** W. Stickel, Hall of Records Bldg., Newark, co. and WPA engr.

N. J., West Orange—Vitr. tile sanitary sewers, manholes, restoring disturbed pavement on Englewood Ave., Quarry Terrace, Valley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handles like a lightweight . . wallops like a heavy!
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streamlined design makes the No. 23 easy to handle. The sturdy backhead is equipped with rubber grips to keep the handle cool.
A MORE POWERFUL BLOW
is produced by a block type piston hammer of new design. Piston is reversible for longer life. Cylinder specially designed to give full effect to every hammer blow.
QUICKER STEEL CHANGES
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Extra POWER ⟶ Extra OUTPUT ⟶ Extra PROFITS

● Until Thor's new No. 23 Paving Breaker came along you often had to sacrifice speed when you needed power, sacrifice power when you needed speed. Now you get both speed and power in *one* tool! For this new medium weight breaker handles like a lightweight and wallops like a heavy! Elimination of every ounce of excess weight has made the Thor No. 23 a trim, compact tool weighing only 59 pounds. A block type piston hammer of new design gives it a great reserve of surplus power. This and other exclusive Thor construction features make the new Thor No. 23 a machine that will make more money for you by boosting output on every demolition job!

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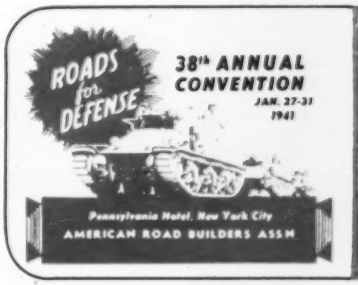

Thor
Portable Power
TOOLS

INDEPENDENT PNEUMATIC TOOL CO.
600 W. JACKSON BLVD., CHICAGO, ILL.
Cochise Rock Drill Mfg. Co. (Division), 6200 E. Slauson Ave., Los Angeles, Calif.

Birmingham, Boston, Buffalo, Cleveland, Detroit, Milwaukee, New York, Philadelphia, Pittsburgh, San Francisco, St. Louis, Toronto, London

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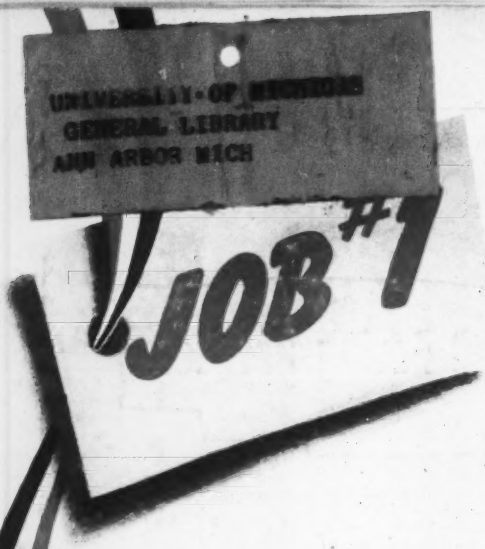

National Defense

AS the National Defense Program gains headway, critical comment is still heard. From one side the demand is "Faster! Faster! Faster!"; from the other it's "Slow down! Take it easy! There's no hurry!" Together, they make a clashing, confusing babble. Those who clamor for more speed should realize that a motor has to be warmed up before it will run efficiently under full throttle—that airplanes cannot be constructed overnight, nor machine tools made by shouting—that battleships do not come off assembly lines. From the other side come shrieks and moans that warn of Bankruptcy and Foreign War because of the mere existence of a National Defense Program. What this group fails to realize is that whatever insures peace is a good investment. No matter how much money it costs, it is infinitely cheaper than war. Is their vision of peace so short-sighted that they cannot see how potent a force for peace is a powerfully armed United States?

However, the champions of speed should look at Germany and realize that its method of absolute regimentation, if employed here, would spell death to our democracy.

And the champions of caution should look at England and France and consider that if these nations had been powerfully armed there would have been no declaration of war.

Both sides may well join in a prayer for our National Defense Program—a prayer for what has been so far accomplished, and for prompt completion to the end that this nation may be spared the catastrophe of war. We salute American genius. We are certain that it can and will accomplish successfully the nation's Herculean task.

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